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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,866	10/16/2003	Chung Long Chang	24061. / TSMC2002-1305	7401
42717	7590	03/25/2005	EXAMINER	
HAYNES AND BOONE, LLP 901 MAIN STREET, SUITE 3100 DALLAS, TX 75202			CRANE, SARA W	
			ART UNIT	PAPER NUMBER
			2811	

DATE MAILED: 03/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/686,866

Applicant(s)

CHANG ET AL

Examiner

Sara W. Crane

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 14-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 19-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Applicant's election with traverse of Group I in the reply filed on 7 January 2005 is acknowledged. The traversal is on the ground(s) that the two groups are not patentably distinct. This is not found persuasive because Applicant does not explain how this conclusion was reached. The Office action of 15 December 2005 sets forth an alternate method of making the device, and Applicant has not noted anything wrong with the analysis set forth in that Office action.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7,8, and 19-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 7 and 8, it is not clear how one perimeter is to envelope another. If this means the perimeter of the electrode that one would see on looking down from the top, then "a" perimeter is not clear, because there would only be one perimeter associated with a top view. Does the claim language somehow encompass perimeters of vertical surfaces, as well as horizontal? Also, because the electrodes are positioned one above the other, it is not clear how a part of one electrode could envelope a part of another electrode.

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In claim 19, last two lines, "coupled to the second electrode by a third electrode by a third via" is not clear. Is this the same third electrode as recited earlier in the claim?

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-13 and 19-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoshi.

With respect to claim 1, the cover figure of Hoshi shows a first electrode (horizontal part of 1a), connected to a first interconnect (horizontal part of 9a). A first insulating layer 3a is located over the first electrode. A second electrode would be the horizontal part of 2a, connected to a second interconnect (horizontal part above 5b). There is a second insulating layer above the second electrode. A third electrode is located above the second insulating layer, electrically connected to the first interconnect through a vertical portion, and through the left hand part of layer 1a and through the vertical portion adjacent 5a in the figure. It would have been obvious to one of ordinary skill that the designations of electrode and interconnect describe functions of the Hoshi regions.

With respect to claim 2, the third electrode is over the other two electrodes.

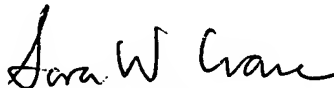
With respect to claim 3, there is an insulating layer above the third electrode which extends downward on the sides of the capacitor, such that the layers identified above as first and second interconnects are located above a part of this insulator. With respect to claim 4, the vertical portions connecting horizontal layers are identified as vias. With respect to claim 5, dual-damascene is understood to describe a process of making, which would not carry weight in this claim because the process has not been shown to give rise to structure distinct from that of the reference. With respect to claim 6, an etch stop layer would have been obvious to allow for an etching step to take place. With respect to claims 7 and 8, the electrodes can be identified with only those portions of the horizontal layers that meet the claim limitation. The rest of the horizontal layer can be identified as an additional interconnect. (The claim language provides no means to distinguish, because both functions are obtained by a conductor.) With respect to claims 9 and 10, the materials recited would have been obvious to obtain known properties of these materials, such as good conductivity. With respect to claim 11, plural layers would have been obvious to optimize conductivity. With respect to claims 12 and 13, optimization of capacitance would have been obvious to allow the capacitor to be used for a particular purpose. With respect to claim 19, the Hoshi figure shows two transistors, one at each side of the figure, located over the substrate and having contacts. A fourth via can be identified as a vertical part of the conductor layer.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Crane, whose telephone number is (571) 272-1652.

The supervisor for Art Unit 2811, Eddie Lee can be reached on (571) 272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Sara W. Crane
Primary Examiner
Art Unit 2811